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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,449	03/08/2002	Toshihiko Ariyoshi	Q68880	1421

7590 08/09/2004
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
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Washington, DC 20037

EXAMINER

KIM, RICHARD H

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 08/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,449

Applicant(s)

ARIYOSHI ET AL.

Examiner

Richard H Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. In view of the Appeal Brief filed on May 28, 2004 , PROSECUTION IS
HEREBY REOPENED.

To avoid abandonment of the application, appellant must exercise one of the
following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply
under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by
a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or
1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable
over Bao et al. (US 6,266,108) in view of Mashino et al. (US 5,886,759) and Funada et
al. (US 4,610,510).

Referring to claim 1, Bao et al. discloses a reflection type liquid crystal display
apparatus comprising a light source (Fig. 1, ref. 30); and a liquid-crystal display device
including a lower substrate (Fig. 1, ref. 2) provided with a reflection plate (Fig. 1, ref. 8),

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and upper substrate (Fig. 1, ref. 1) provided with a transparent film (Fig. 1, ref. 20) on which a light reflecting element is provided for reflecting transmitted light toward the lower substrate side (Fig. 1, ref. 21), and liquid crystal held between the lower substrate and the upper substrate (Fig. 1, ref. 3), the light source being disposed at an outer end surface of the upper substrate (Fig. 1 ref. 30), the liquid-crystal display device being configured so that light incident onto a surface of the upper substrate opposite to a contact surface of the upper substrate with the liquid crystal is reflected by the reflection plate of the lower substrate so as to exit from the surface of the upper substrate opposite to the contact surface of the upper substrate with the liquid crystal (Fig. 2, external light; col. 8, lines 29-39), wherein the light source is disposed on the end surface of the upper substrate (Fig. 1, ref. 30). However, the reference does not disclose that at least one of the end surfaces of the upper substrate except the end surface on which the light source is disposed is coated with a reflection layer.

Mashino et al. discloses a device wherein at least one of the end surfaces except the end surface on which the light source is disposed is coated with a reflection layer (see Fig. 2, ref. 73).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have at least one of the end surfaces except the end surface on which the light source is disposed is coated with a reflection layer since one would be motivated to “improve the display quality by preventing light leakage in the end portion of a display window...” (abstract). Moreover, even though the reference does not disclose that the end surface of the *upper substrate* is disposed with a reflection coating, the reflection layer of Mashino is similarly coated at the end of the light guide layer.

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Therefore, disposing the reflection layer on the light guide layer, whether the layer is an upper substrate or lower substrate, would be obvious.

Further, the reference does not disclose than an end portion of the upper substrate is protruded more than a corresponding end portion of the lower substrate.

Funada et al. discloses a device wherein an end portion of the upper substrate is protruded more than a corresponding end portion of the lower substrate (Fig. 2, ref. 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made for the end portion of the upper substrate to be protruded more than a corresponding end portion of the lower substrate so that sealing material can be sufficiently applied and deposited on the stair formed by both the end of the film substrate 2 (col. 5, lines 10-13).

Referring to claim 2, Bao et al., Mashino et al. and Funada et al. disclose the device previously recited. However, Bao et al. does not disclose that the reflection layer is a reflection sheet.

Mashino et al. disclose that the reflection layer is a reflection sheet (see col. 4, lines 47-49).

It would have been obvious to one having ordinary skill in the art at the time the invention was made for the reflection layer to be a reflection sheet since one would be motivated to “improve the display quality by preventing light leakage in the end portion of a display window...” (abstract).

Referring to claim 7, Bao et al., Maschino et al. and Funada et al. disclose the device previously recited. However, the references do not disclose the apparatus wherein

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a polarizer is disposed on the surface of the upper substrate opposite to the contact surface of the upper substrate with the liquid crystal.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a polarizer on the surface of the upper substrate opposite to the contact surface of the upper substrate with the liquid crystal since polarizer are well know in the art to polarize light improve luminance of a liquid-crystal display device.

Referring to claim 8, Bao et al., Machino et al. and Funada et al. disclose the device previously recited. However, the references do not disclose that apparatus wherein an end portion of the polarizer is protruded more than a corresponding end portion of the lower substrate so that the light source is disposed on the protruded end surfaces of the upper substrate and the polarizer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made for the end portion of the polarizer to be is protruded more than a corresponding end portion of the lower substrate so that the light source is disposed on the protruded end surface of the upper substrate and the polarizer since it is well known in the art for the polarizer to be of the same dimensions as the substrate. Evidence of this is disclosed in Ha et al. (US 6,493,051 B2) and Kim (US 6,380,995 B1). Bao et al. and Mashino et al. teach that the upper substrate protrudes more than the lower substrate. Since it is well known that polarizer are the same length as the substrate as evidenced by Ha et al. and Kim, it would follow that it would be obvious that the polarizer would protrude the same amount as the upper substrate.

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3. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bao et al., Mashino et al. and Funada et al., in view of Sanai et al. (US 5,029,045).

Bao et al., Mashino et al. and Funada et al. disclose the device previously recited. However, the references do not disclose that a reflection plate, wherein the inner surface of the frame is made of a metal plate having a light reflection function, is provided on an inner surface of a frame so that at least one end surface of the liquid crystal display device is disposed closely on the frame.

Sanai et al. discloses a reflection plate, wherein the inner surface of the frame is made of a metal plate having a light reflection function, is provided on an inner surface of a frame (see col. 3, lines 59-68) so that at least one end surface of a liquid crystal display device is disposed closely on the frame (see col. 3, lines 63-64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the reflection plate, wherein the inner surface of the frame is made of a metal plate having a light reflection function, is provided on an inner surface of a frame so that at least one end surface of the liquid crystal display device is disposed closely on the frame since one would be motivated to improve the performance of the LCD. According to Sanai et al., such a modification reduces leakage from the device and also “achieve[s] uniform luminance over all the face of the light guide” (see col. 4, lines 25-26). Moreover, whether having the reflection plate an integral part of the frame or separately attached to the frame, either modification allows for internal reflection of the transmitted light within the frame, and therefore would be functionally equivalent.

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Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H Kim whose telephone number is (571)272-2294. The examiner can normally be reached on 9:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RHK

Richard H Kim
Examiner
Art Unit 2871



ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

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